



**LUCINTEL INSIGHT  
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# **FIVE TRENDS SHAPING THE FUTURE OF THE SWITCHGEAR MARKET**

In the switchgear market, technological innovation and digitalization are playing an increasingly vital role in accelerating the shift from traditional switchgears to digital and intelligent switchgears. The rising wave of hybrid, digital, and intelligent switchgears is creating significant potential in various utility, industrial, residential, and commercial sectors. The major growth drivers for this market are the increasing demand for electricity, growing implementation of smart

grid technology, and continuing investment in upgrading transmission and distribution systems.

The switchgear market is divided into several segments, such as metal enclosed and metal clad, MCCB, fuses, power circuit breakers, other medium and high voltage switchgears, and other low voltage switchgears. Key players of the switchgear market include ABB, General Electric, Schneider Electric, Mitsubishi, Siemens AG, Eaton, Hitachi, and CG Power and Industrial Solutions. These have been working on different strategies to drive sales using highly influential marketing approaches; however, as we examine the challenges and opportunities ahead in this market, companies can benefit from a strategy of developing intelligent switchgears and hybrid switchgears, as well as considering the key target market trends we have identified. Lucintel predicts the global switchgear market will be valued at \$116.7 billion by 2025, with an expected CAGR of approx. 4.0% between 2020 and 2025.

Lucintel identifies five trends set to influence the global switchgear market. Most of the industry players and experts agree that these five trends will accelerate developments in the switchgear industry in the near future. In terms of the widespread knowledge about the switchgear market already on the horizon, there is still a lack of unified perspective on the direction the industry is moving to proactively address developments. To help bring more clarity to this gap, our study aims to provide insights concerning the direction that changes are taking and how these changes will impact the switchgear market.

## 1. Development of Intelligent Switchgears

Intelligent switchgear USP presents the possibility of two-way real-time communication. Intelligent switchgears are capable of measuring various parameters and transmitting the readings to energy utilities and management centers on a real-time



basis. They allow the monitoring and configuration of systems from a remote control center, perhaps their biggest advantage. They can perform assigned tasks with ease from this distant location. Intelligent systems are very quick to detect electric sparks that have the potential to be fire hazards. In fact, they prevent most harmful situations such as short circuits, overload, component failure, etc. Intelligent switchgears can predict the monthly power demand within a load network. They monitor systems and recognize when things are going wrong, sending alerts about a possible breakdown, in advance, during the transmission and distribution process. Such vigilant characteristics of intelligent switchgears reduce power losses to a large extent. Intelligent switchgears are easy to maintain, and since they help in smart energy management, they reduce power bills. Nowadays intelligent switchgears can be pre-configured and pre-programmed if powered by the Internet of Things (IoT). Such switchgears are very handy and reliable for data collection and analysis, providing comprehensive information to the operator and the maintenance team.

## 2. Development of Eco-Efficient Switchgears

Eco-efficient switchgears feature a new fluoroketone-based gas mixture which contains fluoroketone (C5-PFK), oxygen (O<sub>2</sub>), and carbon dioxide (CO<sub>2</sub>) for high-voltage gas insulated switchgear, and fluoroketone (C5-PFK), oxygen (O<sub>2</sub>) and nitrogen (N<sub>2</sub>) for medium-voltage gas insulated switchgears. The new gas mixture lowers CO<sub>2</sub> emissions by 50%. Increasing environmental awareness is the main reason for the development of environmentally friendly products. The new technology fulfills the technical requirements of SF<sub>6</sub> with lower environmental impact. SF<sub>6</sub> (sulfur hexafluoride), a man-made gas, is an insulation system for switchgears with greater arc interruption and insulation properties, and is used for high- and medium-voltage switchgears. To reduce environmental effects from SF<sub>6</sub>, an alternative



has been developed which decomposes a small quantity of  $C O_2$  so that it is not harmful for the environment. The new technology eliminates the need for expensive gas handling and features reliability and safety, with reduced maintenance costs.

### 3. Growing Use of Digital Switchgears

Digitalization in electrical distribution systems is prompting the installation of digital switchgears in electrical systems. Governments and regulatory bodies encourage smart evaluating systems for generation and consumption of energy resources. These initiatives boost the demand for smarter distribution equipment and support the demand for digital switchgears.



Digital switchgears offer network stability, protect equipment in the network, and remain unaffected by the changing network load flows. This is an innovative solution which unites protection, control, measurement, and digital communication. Digital switchgears provide a safe, flexible, and smart electrical network.

### 4. Hybrid Switchgears

Hybrid switchgears combine the components of traditional air-insulated switchgears (AIS) and  $SF_6$  gas-insulated switchgear (GIS) technologies. Hybrid switchgears are characterized by a compact and modular design which encompasses several different functions in one module. These are condensed switchgears which are mainly



used in the renovation and extension of substations with AIS-based switchgears where such



modifications must be carried out while keeping the substation in service. Expensive land prices, unavailability of adjacent land, and increasingly intricate approval procedures have made space and time the main cost factors in the development of substations. Hybrid switchgears provide the opportunity to adapt a substation to the modern world's demands in the fastest time possible, and, most importantly, without requiring additional space, and they have circuit breakers, switches, disconnectors and transformers all housed in one pressure resistant and gas-tight enclosed space.

## 5. Vacuum Switchgears

Nowadays, vacuum switchgears are very rapidly gaining in popularity. Vacuum interruption technology in medium voltage applications dominates air, SF<sub>6</sub>, and oil technologies, as vacuum circuit breakers are more safely and reliably operated where the levels of both faulty and normal operation are quite high. Another major advantage of this technology is that vacuum switchgears are nearly maintenance-free.



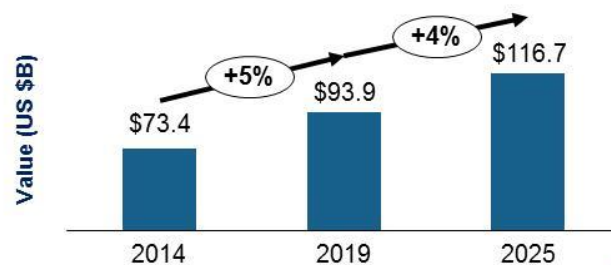
The performance of a circuit breaker mainly depends upon the dielectric medium used for arc quenching. In vacuum switchgears, there is no medium, and the movement of contacts is quite a bit less due to their small contacts gap, hence there is a much smaller requirement of driving energy in this circuit breaker. As a result, the simple spring-spring operating mechanism is sufficient for this switchgear system, and there is no need for hydraulic or pneumatic mechanisms. A simpler driving mechanism means longer mechanical life of a vacuum switchgear.



## Strategic Considerations for Key Players in the Switchgear Market

The switchgear industry is dynamic and ever-changing. Successful industry players are necessarily masters of innovation, change and adaptation. To retain this status, they need to be attentive to current trends. We believe there will be promising opportunities for switchgears in the utility, industrial, residential, and commercial sectors. As per Lucintel's latest market research report (Source: <https://www.lucintel.com/switchgear-market.aspx>), the [switchgear market](#) is expected to grow with a CAGR of approx. 4.0% between 2020 and 2025 and reach \$116.7 billion by 2025. This market is primarily driven by the increasing demand for electricity, growing implementation of smart grid technology, and continuing investment in upgrading transmission and distribution systems.

**Trends and Forecast for the Global Switchgear Market (US \$B)  
(2014-2025)**



Source: Lucintel

Whether you are new to the switchgear market or an experienced player, it is important to understand the trends that impact the development process, as these trends as listed above will lead players to create long-term strategy formulation that will allow them to remain competitive and successful in the long run. For example, to capture growth, some of the strategic considerations for players in the switchgear market are as follows:

- Switchgear market players can increase their capabilities to develop intelligent switchgears for smart energy management.



- Players can focus on eco-efficient switchgears for CO<sub>2</sub> emission reduction, a direction which is expected to lead future trends.
- Investment to increase competencies for the development of digital switchgears, as these provides a safe, flexible, and smart electrical network
- Research and development activities for development of low-cost switchgears

**Note:** In order to gain better understanding, and learn more about the scope, benefits, and companies researched, as well as other details in the switchgear market report from Lucintel, click on <https://www.lucintel.com/switchgear-market.aspx>. This comprehensive report provides you with in-depth analysis on market trends and forecast, segment analysis, regional analysis, competitive benchmarking and company profiling of key players. In addition, we also offer **strategic growth consulting** to meet your customized needs. We have worked with many PE firms and corporate customers in the process of their market entry and M & A initiatives.



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